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Abstract

Theories on intergroup relations suggest that negative attitudes toward immigrants tend to rise when economic conditions deteriorate. However, these arguments were mostly tested during times of economic prosperity in Europe. We put this theoretical expectation to test by analyzing two rounds of the European Social Survey (ESS) with data from 14 West European immigration countries before (2006) and after (2010) the peak of the European economic crisis. Results show that anti-immigrant sentiments increased in countries where perceptions of economic insecurity also increased. Anti-immigrant sentiments decreased in countries where perceptions of economic insecurity declined. In contrast, changes in *objective* economic conditions (i.e. unemployment rates) during the same period of time did not display the expected effects in a similarly robust way.

Keywords

Immigration; Group Threat Theory; European Social Survey; Anti-immigrant sentiments; subjective and objective economic conditions

Introduction

Immigration scholars have long expected a rise in anti-immigrant sentiment in times of economic decline (e.g. Blalock, 1967). According to the logic embodied in the 'competitive threat' theoretical model, an increase in the size of an immigrant population (the so-called 'outgroup population') and deteriorating economic conditions are likely to prompt a rise in anti-immigrant sentiments (Coenders and Scheepers, 2008; Davidov and Meuleman, 2012; Davidov et al., 2014a; Semyonov et al., 2006). This is so because both size of the immigrant population and the economic situation are viewed as two major sources of threat of competition over social and economic resources. More specifically, competitive threat is more intense with increasing size of the immigrant population and with deterioration of economic conditions. Hence, attitudes toward immigrants may be more negative when and where competitive threat is rising (Gorodzeisky, 2011; Meuleman et al., 2009; Quillian, 1995, 1996; Semyonov et al., 2006).

Empirical findings of studies that put the competitive threat theory to test are rather mixed. Several studies lend support to the argument that anti-immigrant sentiment tends to increase with the relative size of the immigrant population in the community (e.g. Quillian, 1995, 1996; Semyonov et al., 2006), whereas others did not find such an association (e.g. Meuleman et al., 2009; Semyonov et al., 2004; Strabac and Listhaug, 2008). Similarly, whereas several studies provided support for the thesis that depressed economic conditions (measured by GNP and unemployment rate) are associated with deeper hostility and with negative attitudes toward immigrants (Coenders et al., 2004; Quillian, 1995; Scheepers et al., 2002; Semyonov et al., 2000, 2006), others provided only partial or no support for this thesis (e.g. Davidov and Meuleman, 2012; Gorodzeisky, 2011; Schneider, 2008; for a review, see Ceobanu and Escandell, 2010). Failure to provide support for the theory in some of these studies may be accounted for by three alternative, but by no means contradictory, sources.

The first source could be a disparity between theory and methodology due to data limitations. Whereas the theoretical expectation is cast within a dynamic framework, most research on the topic utilized cross-sectional data on the individual and the country levels for analyzing the relations between economic conditions and attitudes toward immigrants (for exceptions see, e.g. Coenders and Scheepers, 1998, 2008; Meuleman et al., 2009; Semyonov et al., 2006). The second source may be the frequent focus on objective economic conditions in previous studies. It could well be the case that the way respondents subjectively *perceive* their economic situation may play an important role in the formation of their attitudes. The third source may be situational. Economic conditions in Europe were quite stable and prosperous during the time periods covered by much of the previous research (e.g. Semyonov et al., 2006: 444). In the current study, we will consider each of these possibilities from both a theoretical and an empirical perspective.

Taking advantage of an unforeseen event, the European economic crisis of 2008, we address these potential shortcomings of previous studies on anti-immigrant sentiments. This event enables us to analyze data before and after the crisis as if it were a natural experiment (Creighton et al., 2015) and to test the *dynamic* relations between *changing* economic conditions – both objective and subjective – and *change* in attitudes toward immigrants. In other words, we deliberately use data from two time points to provide a rigorous test of group competition theory in classical immigration-receiving European countries during the historically unique and critical periods of before and after the peak of the economic crisis.[1] Specifically, we analyze data obtained from two rounds of the European Social Survey (ESS) in 14 West European immigration countries before and after the peak of the European economic crisis of 2008. Thus, we are in a unique position to test dynamic elements of the theory (see, e.g. Meuleman et al., 2009; Semyonov et al., 2006) at a critical period of time while considering both objective and subjective measures of the economic situation both at the individual and contextual levels.

Previous research on sources of anti-immigrant attitudes and hypotheses

There is a large body of literature that successfully describes and explains negative attitudes toward immigrants in Europe and other countries (for reviews, see e.g. Ceobanu and Escandell, 2010; Hainmueller and Hopkins, 2014). The studies on the issue used diverse theoretical explanations for the evolvement of anti-immigrant sentiments. However, there is little doubt that one of the most prominent explanations in this literature relies on the 'group threat' theoretical model. Blumer (1958), Blalock (1967) as well as Quillian (1996) advanced explanations for the formation and evolvement of negative attitudes toward minorities and outgroup populations. According to the group threat model, presence of an outgroup population prompts fear of competition over resources. Fear of competition, in turn, is likely to increase prejudice and hostility toward the outgroup population. Threat or fear of competition over resources is a major source of anti-immigrant sentiments and their longitudinal change (see also Smith, 2015). Threat exists both at the individual level and the group (structural) level. This view suggests that the majority population regards economic and cultural resources as scarce and limited. Consequently, members of the majority population consider immigrants as potential competitors for such resources, hence, as a threat to their well-being.

At the individual level, threat is more pronounced among the socially and economically vulnerable groups. More specifically, unemployed individuals with low (perceived) income or low level of education are particularly vulnerable and, thus, threatened by competition due to newcomers. The threat is geared up by the perception that immigrants take away jobs, exploit the welfare system, and compete over housing and other social resources. The logic of the 'competitive threat' model leads to the expectation that individuals who are socially and economically vulnerable would express more negative attitudes toward immigrants (Gorodzeisky, 2011; Kunovich, 2004; Pichler, 2010; Raijman et al., 2003;

Semyonov and Glikman, 2009; Semyonov et al., 2006, 2008). Similarly, when economic conditions in the country get worse and jobs become scarce, more individuals will feel threatened by newcomers and, thus, will express negative attitudes toward the immigrant population (Meuleman et al., 2009).

Along this line of logic, researchers contend that not only individual-level characteristics (e.g. socio-demographic and economic attributes) but also a country's economic conditions are predictive of anti-immigrant attitudes (Blalock, 1967; Coenders et al., 2004; Gorodzeisky, 2011; Davis and Deole, 2015; Kunovich, 2004; Lahav, 2004; Meuleman et al., 2009; Pichler, 2010; Quillian, 1995, 1996; Scheepers et al., 2002; Semyonov et al., 2006). The studies we cited above advance the argument that bad and unfavorable economic conditions increase economic competition. As a result, threat due to the presence of immigrants (as an outgroup population) increases negative attitudes toward immigrants. It should be noted that group threat could be realistic as well as perceived. In other words, this mechanism could operate with both objective and aggregated subjective perceptions of the economic situation of individuals. Indeed, objective and aggregated subjective economic insecurity may or may not have similar consequences in the formation of attitudes toward immigration. Nevertheless, the majority of studies to date focused on realistic economic (e.g. unemployment rate, gross domestic product -GDP) rather than on perceived economic conditions. Also in times of economic crisis, both objective indicators and perceived economic insecurity may strongly operate in shaping and forming negative attitudes and hostility toward immigrants.

Following this theoretical reasoning, a large body of research examined whether a vulnerable economic situation at the individual level and depressed economic conditions at the country level coupled with rising immigration are likely to increase negative attitudes toward immigrants (Gijsberts et al., 2004; Kaufmann, 2014; Kunovich, 2004; Scheepers et al.,

2002; Schlüter and Wagner, 2008; Schneider, 2008; Semyonov et al., 2006; Strabac and Listhaug, 2008). Whereas individual-level predictors such as low education or low income provided consistent and firm support for the expectation that vulnerable individuals express more negative attitudes toward immigrants, country-level predictors such as unemployment rate (or GDP) provided somewhat less consistent support for group threat theory: Coenders and colleagues (2004), Kunovich (2004), Lahav (2004), or Quillian (1995) contributed empirical evidence to the thesis that economic conditions (in the context of European societies) are associated with attitudes toward immigration. A few other studies provided mixed or no evidence for this postulation. For example, Scheepers et al. (2002) found no effect of unemployment rate in European countries on threats generated by immigrants. Likewise, Meuleman et al. (2009) found no effect of the absolute level of economic conditions (GDP/c) on attitudes toward immigrants in European countries. We are not aware of previous research that examined whether and to what extent the aggregated *perceptions* of economic insecurity in a country foster negative sentiment toward immigration independently of the commonly used objective economic conditions.

Several scholars advance an alternative proposition suggesting that the presence of immigrants may in fact reduce (rather than increase) hostility of the host society members toward immigrants rather than increase it (Pettigrew and Tropp, 2006; Schlüter and Wagner, 2008; Weber, 2015). This literature suggests that contact, which becomes possible when a large number of immigrants are present, is a very effective means to reduce enmity of the host society toward newcomers by lowering anxiety and increasing knowledge and empathy toward them (Thomsen and Birkmose, 2015). Although past studies suggested that only positive contacts may lead to such an outcome (Allport, 1954), Pettigrew (1998) and Pettigrew and Tropp (2006) found that also negative contact may reduce hostility toward immigrants. A few studies have put both group threat and contact theories to test in a single framework. For example, Schlüter and Wagner (2008) found empirical support for both of

them, implying that the two theories are not mutually exclusive but rather complementary. A larger immigrant group size both increases threat and contact, whereas contact in turn reduces threat. Thus, both processes operate in a complementary way. Furthermore, Weber (2015) found that contact operates rather on the higher (regional) level. Since our main goal in this study is the effect of the economic conditions on threat, we will not focus on the additional effect of immigrant size on contact and on reducing anxiety and threat, but just control for it.

To date, most studies on attitudes toward immigrants in Europe applied a static (i.e. cross-sectional) research framework, and only a few examined trends in such attitudes and their sources within a dynamic framework (i.e. exceptions include Coenders and Scheepers, 1998, 2008; Meuleman et al., 2009; Semyonov et al., 2006). More specifically, Coenders and Scheepers (1998) examined change in the support of ethnic discrimination in the Netherlands between the end of the 1970s and the mid-1990s. In another study, the same authors (i.e. Coenders and Scheepers, 2008) investigated trends in support of social integration of guest workers among Germans. Semyonov and colleagues (2006) analyzed the sources of anti-foreigner sentiments in 12 European countries and on four measurement occasions between 1988 and 2000. Meuleman et al. (2009) investigated change in anti-immigrant sentiments between 2002 and 2006 in diverse European countries. The latter study provided support for a dynamic version of the theory by demonstrating that *worsening* economic conditions or *increase* in the size of the immigrant population (rather than their absolute level) result in increasing negative attitudes toward immigrants.

In sum, reviewing the theoretical models and the previous studies carried out in the European context leads us to formulate the following three hypotheses: At the individual level *(H1) we expect that the lower the subjective (perceived) income the stronger the negative attitudes toward immigrants at both points in time*[2]. At the country level, and relying on the dynamic version of group threat theory, *w*e expect *(H2a) rising unemployment in a country to*

result in more negative attitudes toward immigrants, and (H2b) declining unemployment rates to result in less negative attitudes toward immigrants. Furthermore, we expect (H3a) rising aggregate levels of ***subjective income insecurity*** *to result in more negative attitudes toward immigrants, and (H3b) declining aggregate levels of* ***subjective income insecurity*** *to result in less negative attitudes toward immigrants.* Table 1 provides a summary of the predictors and the hypotheses.

Table 1 about here

The present research, thus, joins the small group of studies that adopted and utilized a dynamic (rather than a static) framework to examine whether *level or change* in attitudes toward immigrants were driven by *changing* economic conditions – both objective and subjective. We test our hypotheses at two time points, before and after the European economic crisis that took place around 2008. Before proceeding with the analysis of the data, a brief overview of the setting seems in order.

The Setting

In recent years, Europe experienced its worst economic crisis since the 1930s (Billiet et al., 2014). Many people lost their jobs, and the European markets struggled with low and declining economic growth, decreasing budgets for social welfare, increasing unemployment, and increasing economic insecurity (Billiet et al., 2014). However, the crisis did not impact all European countries in a similar way. Some countries suffered more severely from the crisis than others. For example, Germany and Norway enjoyed economic growth whereas Greece, Spain, and Ireland experienced a severe decline. At the same time, unemployment rates decreased in Germany but increased steeply, especially among younger cohorts, in Greece and Spain (International Labor Force Survey: International Labour Organization, ILO, 2013). Thus, the cross-country variation in *change* of economic conditions in Europe across time

(before and after the peak of the crisis) offers us the opportunity to test the predictive validity of a dynamic version of group threat theory. Indeed, the quasi-experimental research design that we implemented here offers a unique opportunity to examine whether change in anti-immigrant sentiments were more evident in countries where objective and subjective economic conditions had deteriorated more severely (due to the crisis), according to the dynamic version of the model of group threat theory.

Data and Variables

In the present study we utilize two rounds of the European Social Survey (ESS) with individual-level data from 14 West European countries right before (2006, round 3) and after (2010, round 5), the peak of the European economic crisis. The only exception was Greece: The Greek data were from the 2004 ESS wave because data for Greece were not available for 2006. The ESS is a high-standard, biennial representative survey of the European public aged 15 and older employing a multistage random sampling design and conducting face-to-face interviews (Jowell et al., 2007). We retrieved data for theses analyses from http://www.europeansocialsurvey.org/. The website includes further information and documentation on sampling procedures and the questionnaires. We handled missing values (including 'don't knows') using the recommended Full Information Maximum Likelihood (FIML) procedure (see Schafer and Graham 2002) implemented in Mplus (Muthén and Muthén 1998-2012).

The 14 West European countries in the study are: Belgium (BE), Denmark (DK), Finland (FI), France (FR), Germany (DE), Great Britain (GB), Greece (GR)[3], Ireland (IE), Netherlands (NL), Norway (NO), Portugal (PT), Spain (ES), Sweden (SE), and Switzerland (CH). Table 2 presents the sample sizes for each country after *excluding* respondents who were not born in the country or whose mother or father were not born in the country. We purposely decided to focus only on these European countries, because in these countries

immigration obviously plays either a continuous or an increasingly significant role. We did not include data from other rounds because we focus here *on the time points closest to the peak of the economic crisis*.

The dependent variable *'attitudes toward immigrants'* was constructed as an index derived from three items measuring perceived threat due to immigrants. While the measures focus on perceived threat, they actually capture the broader concept of 'attitudes toward the immigrant population' or 'anti-immigrant sentiments'. Taking the impact of immigrants on the country into consideration, respondents assessed each item on an 11-point scale ranging from 0 (good) to 10 (bad). The first item pertains to the impact that immigrants exert on the economy, the second item focuses on immigrants' impact on the culture, and the third item deals with the general impact that immigrants have on the country (for an exact wording of the items and all other individual-level variables, see Appendix A). The resulting composite score ranged from 0 (a very positive impact) to 10 (a very negative impact). Previous studies (e.g. Davidov et al., 2015, 2016a; Meuleman and Billiet, 2012) demonstrated, by using multiple group confirmatory factor analysis (MGCFA: Bollen, 1989; Brown, 2015), that these measurements are both reliable and comparable across the countries included in the ESS. Comparability across countries and time points is a preliminary condition to conduct a meaningful comparative analysis on attitudes (Davidov et al., 2014b). In addition, we conducted MGCFA for these indicators for each country across the two time points. The factor loadings of all items were 0.7 or higher, indicating high measurement reliability (Brown, 2015). Furthermore, we managed to establish scalar invariance (Davidov et al., 2014b) over time between 2006 and 2010 in all countries for these measurements (with partial scalar invariance for Spain and Ireland). Thus, these findings allow us to use the index with these indicators in the analysis and interpret the results meaningfully.

Individual-level predictors of attitudes toward immigrants include: *Perceived income insecurity* (also referred to as subjective income) measured as a response to the question assessing the feeling about the household income on a 4-point scale (1 = Living comfortably on present income, 2 = Coping on present income, 3 = Difficult on present income, 4 = Very difficult on present income). *Time* was measured with the year in which the survey took place (1 = 2010, 0 = 2006 or 2004 for Greece). In addition, we included several control variables. We coded *employment status* as 1 if unemployed (and zero otherwise). We coded the *education level* as an ordinal variable according to the International Standard Classification of Education (ISCED) scheme ranging from 0 (Less than lower secondary education; ISCED 0-1) to 5 (Tertiary education completed; ISCED 5-6). In addition, we controlled for *age* (in years), *gender* (1 = female, 0 = male), *self-assessed religiosity* (measured on an 11-point scale ranging from 0 = not all religious to 10 = very religious), *type of place of residence* (1 = big city or suburbs or outskirts of big city, 0 = otherwise), and *self-reported political orientation* (ranging from 0 = left to 10 = right). Previous research demonstrated that older, less educated, unemployed, right-wing males, and those living in rural areas report more negative attitudes toward immigrants. (Semyonov et al., 2006). Following research which has shown that value orientations are important predictors of attitudes toward immigrants (e.g. Davidov et al., 2008a, Davidov et al., 2008b; Davidov and Meuleman, 2012; Davidov et al., 2014a, 2016b), we also included *conservation*[4] and *self-transcendence* values among the independent variables. Conservation was a summary index combining six items measuring the importance of three sub-dimensions: tradition, conformity, and security. Universalism was a summative index combining five items measuring the importance of two sub-dimensions: universalism and benevolence. The questions measure the similarity of a respondent to the motivations, goals, and aspirations of a described person (gender-matched), and they were measured on a scale ranging from 1 = very much like me to 6 = not like me at all, reverse coded (for a detailed definition of the variables and their measurements, see Appendix A and Davidov et

al., 2008b). Past studies suggest that at least metric invariance is given for these values across most ESS countries (Cieciuch et al., 2016; Davidov et al., 2008b; Zercher et al., 2015). Davidov and colleagues (2008a) and Davidov and Meuleman (2012) showed that people scoring high on conservation values are more negative and self-transcendent people more positive toward immigrants. The full list of individual-level variables with question wording and response categories is displayed in Appendix A.

Two country-level contextual variables capturing economic conditions assessed whether *changes* of *objective and subjective (perceived) economic conditions* influenced anti-immigrant attitudes. The *objective economic* conditions were operationalized by *unemployment rate* in a country (ILO, 2013). Unemployment rate in 2006 (before the peak of the crisis) and in 2010 (after the peak of the crisis) was an average over two years: 2006 or 2010 and the previous year, respectively. To operationalize *subjective economic insecurity* at the country level, we calculated the *mean response to the question measuring perceived income* in each country. This question assessed the feeling about household's income on a 4-point scale. We aggregated responses to this question in each country in 2006 and in 2010. We calculated measures of change for unemployment rates, perceived income insecurity, and aggregated anti-immigrant sentiments by subtracting the value in 2006 from the value in 2010 and then dividing it by the initial value in 2006. In the multivariate analyses, we controlled for the share of non-EU immigrants relative to the population size and the level of GDP per capita (divided by 1,000). We obtained information on the GDP from the World Bank´s database, World DataBank (World Bank, 2015). Appendix A lists also all the country/time-level variables in the analysis. Appendix B lists the share of non-EU immigrants and GDP/c by country and year.

Analysis and Results

Descriptive overview

In Table 2 we describe mean values of anti-immigrant sentiments, unemployment rate, and perceived income insecurity in 2006 (prior to the economic crisis) and in 2010 (after the peak of the crisis) by country. The data reveal variation across countries and over time in the variables listed in the table.

Table 2 about here

The most extreme level of anti-immigrant sentiment before the economic crisis was in Greece followed by Great Britain, France, Portugal, and Germany. The most positive attitudes toward immigrants before the crisis were in Sweden followed by Finland. All other countries were in between. Change rates in attitudes toward immigrants between the two time measurements were rather moderate in most countries (see also Hatton, 2014a, 2014b). The most dramatic rise in anti-immigrant attitude took place in Ireland (26% increase). We can observe a substantial rise in negative attitudes also in Greece (where attitudes were initially most negative) as well as in Finland and Belgium. In contrast, attitudes toward immigrants became more positive in Sweden (where attitudes were initially very positive) and in Germany.

As depicted in Table 2, the unemployment rate before the crisis was highest in Germany followed by Spain, France, and Greece. In contrast, the unemployment rate before the crisis was lowest in Norway, Switzerland, the Netherlands, Denmark, and Ireland. Unemployment increased in most (but not all) countries. The rise in unemployment was especially pronounced in Spain (where the unemployment rate more than doubled), Greece, Ireland (where it was initially low but more than doubled during the economic crisis), Portugal, and Denmark. The unemployment rate decreased slightly, however, in Germany, the Netherlands, Belgium, and Norway.

Countries not only varied in unemployment rate (as an objective proxy of economic conditions) but also in the level of perceived income of the country's respondents (as an indicator of subjective economic conditions). The mean level of perceived income insecurity before the crisis was highest in Greece and Portugal and lowest in Sweden and Denmark. Compared to the changes in unemployment rate, changes in the mean levels of perceived income insecurity were less dramatic in most countries. Nonetheless, a considerable increase took place in Ireland and Greece, whereas perceived income insecurity slightly decreased in Germany, Switzerland, and Norway

The descriptive findings so far inform us about stability and change in level of anti-immigrant attitudes and in the objective and subjective economic conditions in the 14 European countries before and after the peak of the economic crisis. In the following we first examine the country-level associations between anti-immigrant attitudes and the objective as well as subjective economic conditions in 2006 and in 2010 separately. We display these associations in Figures 1 and 2. Then we turn to an analysis of the associations between country-level changes in anti-immigrant attitudes and country-level changes in the objective as well as subjective economic conditions.[5] We would like to note, however, that these associations do not test our hypotheses, since we can neither rule out individual level characteristics nor compositional effects. Nevertheless, they provide valuable information about the countries. We present them in Table 2 and Figure 3.

Figures 1 and 2 about here

As Figure 1 demonstrates, the country-level associations between anti-immigrant attitudes and unemployment rates are positive both in 2006 (r = .453) and 2010 (r = .338), indicating that higher unemployment rates are associated with higher levels of anti-immigrant sentiments in both years.[6] Likewise, Figure 2 reveals that country-level anti-immigrant attitudes and mean levels of perceived income insecurity are highly and significantly

correlated in both 2006 (r = .745) and 2010 (r = .840), indicating that countries with higher perceived income insecurity tend to show higher levels of anti-immigrant attitudes both before and after the crisis. The findings also show that at each point in time, anti-immigrant attitudes were more strongly related to subjective economic conditions than to objective economic conditions. Indeed, the results of the analysis suggest that, on average, country average anti-immigrant sentiments tend to be less pronounced in prosperous countries and more pronounced in countries where economic conditions, whether objective or subjective, are more suppressed. Sensitivity analyses without Ireland, a country that suffered from the most severe increase in unemployment, portray a similar picture.

Table 3 and Figure 3 about here

The associations between *change* in anti-immigrant attitudes and *change* in unemployment rates demonstrate that countries with an *increase* in unemployment rates are likely to experience an *increase* in anti-immigrant sentiments. This is evident in the positive correlation between *change* in unemployment rate and *change* in attitudes (r = .737, Table 2). It is interesting to note that the association between change in anti-immigrant sentiments and the aggregated change in subjective income insecurity is even stronger than the association between changes in unemployment and attitudes, as evidenced by the very high correlation (r = .912) between the former (see also Table 2). In other words, the data lend support to the expectation that countries which experienced an increase in the indicator of perceived (i.e. subjective) income insecurity also experienced an increase in anti-immigrant sentiments. A sensitivity analysis (see Wilkes et al., 2007) without Ireland produced a similar picture – albeit not as strong in the case of the association between change in anti-immigrant attitudes and change in unemployment rates (r = .245).

Predicting anti-immigrant attitudes by change in economic conditions

The results of the country-level descriptive analyses suggest that *levels* of both objective and subjective economic conditions in a country are associated with country-*level* attitudes toward immigrants. They also suggest that country-level *change* in economic conditions may be associated with country-level *change* in anti-immigrant sentiments. However, the country-level analysis does not control for the characteristics of the individuals and for possible compositional effects. Ideally, one needs panel data to evaluate whether change in individual-level attitudes is associated with change in (whether objective or subjective) economic conditions while controlling for socio-demographic characteristics. Unfortunately, the ESS does not provide panel data but only cross-sectional information. Therefore, we utilize country change scores in objective and subjective economic conditions between 2006 and 2010 (before and after the peak of the crisis) for groups of countries as independent variables to study country-level change in attitudes between 2006 and 2010 while controlling for individual-level attributes. This model allows us to examine *Hypotheses 2a,b* and *3a,b*, namely, whether and to what extent hostility toward immigrants is higher in countries with worsening (objective or subjective) economic conditions (and lower in countries with improving economic conditions) controlling for characteristics of the countries and the individuals residing in the country. [7]

In the analysis that follows, we pooled the data across countries and conducted multivariate analyses to estimate the effect of change in (objective and subjective) economic conditions on attitudes toward immigrants while controlling for various country- and individual-level predictors[8]. We distinguished among three groups of countries according to stability and change in objective and subjective economic conditions: countries where unemployment declined between 2006 and 2010, countries with *stable* unemployment rates, and countries where unemployment rates rose during this period. The reference group was the

group of countries with stable unemployment. Furthermore, we distinguished between countries where perceived income insecurity declined between 2006 and 2010, countries with *stable* perceived income insecurity, and countries where perceived income insecurity rose during this period. The reference group was the group of countries with stable perceived income insecurity. [9]

Subsequently, we estimated a series of OLS regression equations with robust standard errors (using the software package *Mplus* [Muthén and Muthén, 1998-2012]) that included individual-level predictors of attitudes plus the dummy variables representing the groups of countries. Three equations were estimated: In equation 1, the attitudes toward immigrants were predicted as a function of individual-level attributes plus year (in order to estimate average net change in attitudes over time). In equations 2 and 3, we included the dummy variables that represented countries with increase or decrease in unemployment (equation 2) and perceived income insecurity (equation 3) with stable countries as the reference category. Then we included in equations 2 and 3 the interaction terms between the country dummies and year, as predictors of attitudes to test Hypotheses 2 and 3. We controlled for the share of the non-European population in the country and for the country-level GDP per capita in all the models. The results of this analysis are presented in Table 4.

Table 4 about here

Equation 1 in Table 4 reveals that, on average, negative attitudes toward immigrants increased between 2006 and 2010 as evident by the positive effect of year (b = .079). In line with previous research, anti-immigrant attitudes tend to decrease with education and to increase with income insecurity as well as with unemployment. These findings provide firm support for the hypothesis *(H1)* that socially and economically vulnerable individuals tend to be more hostile toward immigrants (regardless of the year surveyed). Individuals with right-wing political orientation tend to have higher levels of anti-immigrant attitudes. Females

display more negative attitudes, whereas older as well as religious individuals, and those living in a city, express less negative attitudes. Moreover, attributing importance to conservation values is associated with higher levels of anti-immigrant attitudes whereas attributing priority to self-transcendence values predicts lower levels of anti-immigrant sentiments. All the effects were quite robust and similar to those found in the country-specific analyses that we performed.[10] Furthermore, consistent with previous studies, a higher share of non-EU immigrants relative to the population size is associated with more hostile attitudes, whereas higher levels of GDP per capita are associated with less hostile attitudes.

In equation 2 we introduced two dummy variables distinguishing between countries that experienced an *increase* in unemployment and countries that experienced a *decline* in the unemployment rate between 2006 and 2010 as compared to those with stable economic conditions as well as the interaction terms between the country dummy variables and year. Table 4 demonstrates, in support of hypothesis *H2a*, that higher anti-immigrant attitudes were more pronounced in countries with rising unemployment rates from 2006 to 2010 compared to those with stable economic conditions as evident in the (weak but) positive interaction effect between the year dummy and the dummy variable representing the group of countries with rising unemployment (see also Figure 4a). Furthermore, and in line with hypothesis *H2b*, in countries with declining unemployment rates, anti-immigrant attitudes in 2010 were lower compared to countries with stable economic conditions as indicated by the negative interaction coefficient of these country dummy variables and time.

In equation 3, the unemployment criterion for distinguishing between groups of countries was replaced by the subjective criterion based on the aggregated population response regarding how well respondents felt about their own income. In line with hypothesis *H3a*, and as indicated by the significant positive interaction coefficient, anti-immigrant attitudes were more pronounced in countries where subjective income insecurity increased

compared to countries with stable subjective economic conditions (see also Figure 4b). Additionally, and in support of Hypothesis *H3b*, as indicated by the negative interaction coefficient, anti-immigrant attitudes in 2010 was less pronounced in the countries with a decrease in subjective income insecurity compared to countries with stable conditions. This is also displayed in Figure 4b. Thus, anti-immigrant attitudes were lower in 2010 in countries with a decrease in subjective income insecurity and higher in countries with an increase in subjective income insecurity compared to countries in which subjective economic conditions remained stable.

Figure 4 about here

As Ireland displayed the most extreme increase in unemployment, we re-analyzed the models without Ireland. These models supported empirically only *Hypotheses 3a and 3b* (with the effect of improvement or decline in *subjective* economic insecurity) but not *Hypotheses 2a and 2b* (with the effect of increase or decline in unemployment).[11]On the basis of this analysis we can conclude that, when controlling for the individual-level attributes, anti-immigrant sentiments were significantly more pronounced in countries with deteriorating *subjective* economic conditions and less pronounced in countries with an improvement in subjective economic conditions (as compared to the countries with stable subjective economic conditions). Findings for the effect of changes in unemployment on changes in anti-immigrant attitudes were not as clear. Thus, the results displayed in Table 4 and Figure 4 provide support for the theoretical expectations that change in *subjective* economic conditions can be consequential for the formation of attitudes toward immigrants in times of economic crisis as the one experienced in 2008 in Europe.

Summary and discussion

In the present paper we use the 2008 economic crisis in Europe to formulate a natural experimental research design that enables a direct examination of theoretical expectations regarding the impact of deteriorating economic conditions on attitudes toward immigrants. More specifically, we utilized data from two rounds of the ESS data set before and after the peak of the European economic crisis in 14 European Western immigration countries to examine the expectations that anti-immigrant sentiment would be higher among economically vulnerable individuals and in countries that experienced more severe objective and subjective economic decline. In line with previous research, the data analysis provided firm support for the expectation that individuals who feel less secure with their income are more likely to have negative attitudes toward immigrants. Yet the data provided only partial support for our expectation regarding the association between change in objective and subjective economic conditions and anti-immigrant attitudes. More specifically, we found a robust association between anti-immigrant sentiments with change in *subjective* economic conditions, but not with change in unemployment rates. [12]

Remarkably, change in country-level *subjective perceptions* of the economic situation were much more relevant than objective economic indicators (e.g. change in unemployment rates) for predicting anti-immigrant sentiments. Apparently, perceptions of threat as reflected by subjective evaluations of the economic situation play a stronger role in formation of anti-immigrant attitudes than realistic threat as reflected by objective economic conditions. Indeed, a shift in public views regarding the economic situation is likely to result in higher levels of anti-immigrant sentiment. The more economically insecure the public feels, the more extreme is the rise in hostility and in negative attitudes toward immigrants.

Ideally, our analysis would employ panel data to evaluate the association between changes in economic conditions and changes in negative attitudes toward immigrants (while controlling for the effect of individual-level and socio-demographic characteristics). The ESS

data set, however, provides us with only repeated cross-sectional data with information obtained from different respondents at each time point (but not with individual-level panel data). Subsequently, we adopted an analytical strategy that enabled the examination of the effect of change in objective or subjective economic conditions on change in respondents' country-level attitudes toward immigrants before and after the crisis (while controlling for the socio-economic and demographic attributes of the respondents). We do hope that future studies employing panel data could deliver further evidence as to the ways through which changes in objective or subjective economic conditions are related to *changes* in anti-immigrant attitudes. The dynamic analytical approach that was adopted in the present research leads us to the conclusion that changes in *subjective* economic conditions in times of the European economic crisis were significantly related to changes in attitudes toward immigrants. That is, anti-immigrant sentiment intensified in countries where people perceived that the economic conditions in the country were deteriorating.

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Tables

Table 1: Summary of predictors and hypotheses

Hypotheses	**Explanatory variables**	**Equations**
Individual-level		
*(*H1) we expect that *the lower the subjective (perceived) income the stronger the negative attitudes toward immigrants at both points in time*	Perceived income insecurity	1
	Control variables	
	Year	all
	Age	all
	Female	all
	Living in a city	all
	Religiosity	all
	Political orientation	all
	Conservation	all
	Self-transcendence	all
	Education	all
	Unemployment	all
Country-level		
(H2a) We expect *rising unemployment in a country to result in more negative attitudes toward immigrants*	Group of countries with rising unemployment*time	2
(H2b) We expect *declining unemployment rates to result in less negative attitudes toward immigrants*	Group of countries with declining unemployment*time	2
(H3a)We expect *rising aggregate levels of* ***subjective income insecurity*** *to result in more negative attitudes toward immigrants*	Group of countries with rising subjective income insecurity*time	3
(H3b) We expect *declining aggregate levels of* ***subjective income insecurity*** *to result in less negative attitudes toward immigrants*	Group of countries with declining subjective income insecurity*time	3
	Control variables	
	Share of non-EU immigrants	all
	GDP/c *100	all
	Rising unemployment	2
	Declining unemployment	2
	Rising perceived income insecurity	3
	Declining perceived income insecurity	3

Table 2. Descriptive overview: Mean anti-immigrant attitudes, unemployment rate, and mean perceived income insecurity in 14 European countries in 2006 and 2010 with country sample sizes in the last column

	Anti-immigrant attitudes			**Unemployment rate**			**Mean of perceived income insecurity**			**n**	
	2006	2010	change	2006	2010	change	2006	2010	change	2006	2010
BE	5.04	5.21	3%	8.40	8.10	-4%	1.83	1.79	-2%	1,479	1,352
CH	4.41	4.29	-3%	4.25	4.35	2%	1.59	1.51	-5%	1,210	947
DE	5.16	4.87	-6%	10.75	7.45	-31%	1.97	1.84	-7%	2,483	2,452
DK	4.29	4.35	1%	4.35	6.75	55%	1.37	1.36	-1%	1,316	1,361
ES	4.70	4.81	2%	8.85	18.90	114%	1.85	1.94	5%	1,690	1,658
FI	4.00	4.22	5%	8.05	8.30	3%	1.91	1.95	2%	1,812	1,768
FR	5.42	5.35	-1%	8.85	9.20	4%	1.85	1.86	0%	1,563	1,362
GB	5.68	5.65	-1%	5.10	7.70	51%	1.78	1.88	6%	1,979	1,940
GR	6.51	7.13	10%	9.85	11.15	13%	2.52	2.84	12%	1,985	2,293
IE	4.29	5.39	26%	4.40	12.95	194%	1.66	2.22	34%	1,481	2,065
NL	4.64	4.52	-3%	4.30	3.95	-8%	1.65	1.63	-1%	1,590	1,561
NO	4.58	4.50	-2%	3.90	3.30	-15%	1.53	1.45	-5%	1,539	1,307
PT	5.41	5.48	1%	7.75	10.30	33%	2.50	2.51	0%	2,011	1,949
SE	3.98	3.55	-11%	7.45	8.50	14%	1.48	1.44	-3%	1,531	1,197
Total	4.87	4.95	2%	6.88	8.64	30%	1.82	1.87	3%	23,669	23,212

Note: n: number of individual cases; Greece: 2004 instead of 2006; the data do not contain respondents who were not born in the country or whose mother or father were not born in the country.

Table 3. Country-level correlations between change rates of anti-immigrant attitudes, unemployment, and perceived income insecurity (14 countries)

	Δ Anti-immigrant attitudes	**Δ Unemployment rate**	**Δ Perceived income insecurity**
Δ Anti-immigrant attitudes	1	.579*	.891***
Δ Unemployment rate	.737**	1	.660*
Δ Perceived income insecurity	.912***	.843***	1

Note: * $p < .05$, ** $p < .01$, *** $p < .001$, residual correlations above the diagonal, correlations between change variables below diagonal. Residuals were obtained by regressing anti-immigrant attitudes, unemployment rates, and perceived income insecurity, respectively, in 2010 on anti-immigrant attitudes, unemployment rates, and perceived income insecurity in 2006.

Table 4. Pooled OLS regression equations predicting the level of anti-immigrant sentiments in 2006 and 2010 by individual-level attributes, year of survey, and three types of countries (classified according to the change in objective and subjective economic conditions)

	H	Eq. 1	Eq. 2	Eq.3
Intercept		.4817***	4.820***	4.606***
Age		-.001*	-.001**	-.001
Female		.161***	.162***	.158***
City		-.100***	-.096***	-.115***
Religiosity		-.033***	-.029***	-.032***
Political orientation		.097***	.101***	.101***
Conservation		.574***	.567***	.530***
Self-transcendence		-.568***	-.557***	-.539***
Education	-	-.260***	-.267***	-.263***
Unemployment	+	.220***	.225***	.189***
Perceived income insecurity	+	.423***	.404***	.382***
Year (2010)		.060***	.038	-.008
Groups of countries classified by changing obj. and sub. economic conditions (stable countries are the reference category) :				
Rising unemployment			-.132***	
Declining unemployment			.424***	
Rising unemployment*time	+		.078*	
Declining unemployment*time	_		-.119*	
Rising perceived income insecurity				.317***
Declining perceived income insecurity				.558***
Rising perceived income insecurity*time	+			.355***
Declining perceived income insecurity*time	-			-.076^{+}
Stock of immigrants		.086***	.083***	.002
GDP/c*1000		-.020***	-.029***	-.029***
Adjusted R^2		.193	.196	.192

Note: Rising unemployment rates = Countries in which unemployment rates increased by at least 10% (DK, ES, GB, GR, IE, PT, SE); Declining unemployment rates = Countries in which unemployment rates decreased by at least 10% (DE, NO); Rising perceived income insecurity = Countries in which mean levels of perceived income insecurity increased by at least 3% (ES, GB, GR, IE,); Declining perceived income insecurity = Countries in which mean levels of perceived income insecurity increased by at least 3% (CH, DE, NO). All other countries constitute the reference category.

$^{+}p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; equal weighted country cases n = 46,881 individuals in 14 countries and two time points, 2006 and 2010; Full Information Maximum Likelihood (FIML) estimation; age, education, religiosity, political orientation, conservation, self-transcendence, and perceived income insecurity were centered around the grand mean.

Figures

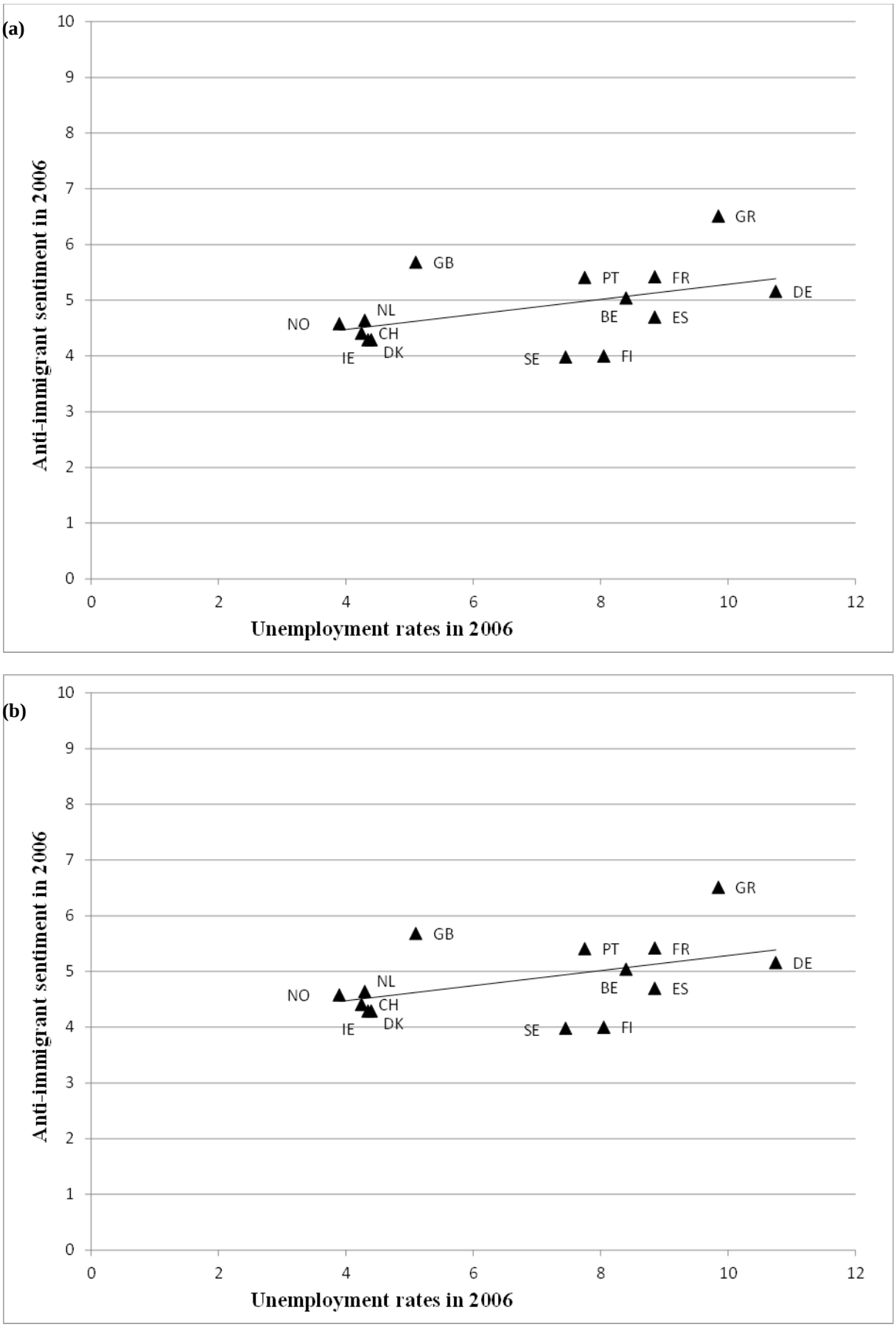


Figure 1. Associations between anti-immigrant attitudes and unemployment rates in 2006 (Figure 1a) and 2010 (Figure 1b) in 14 European countries. Note: A sensitivity analysis excluding Ireland provides similar findings.

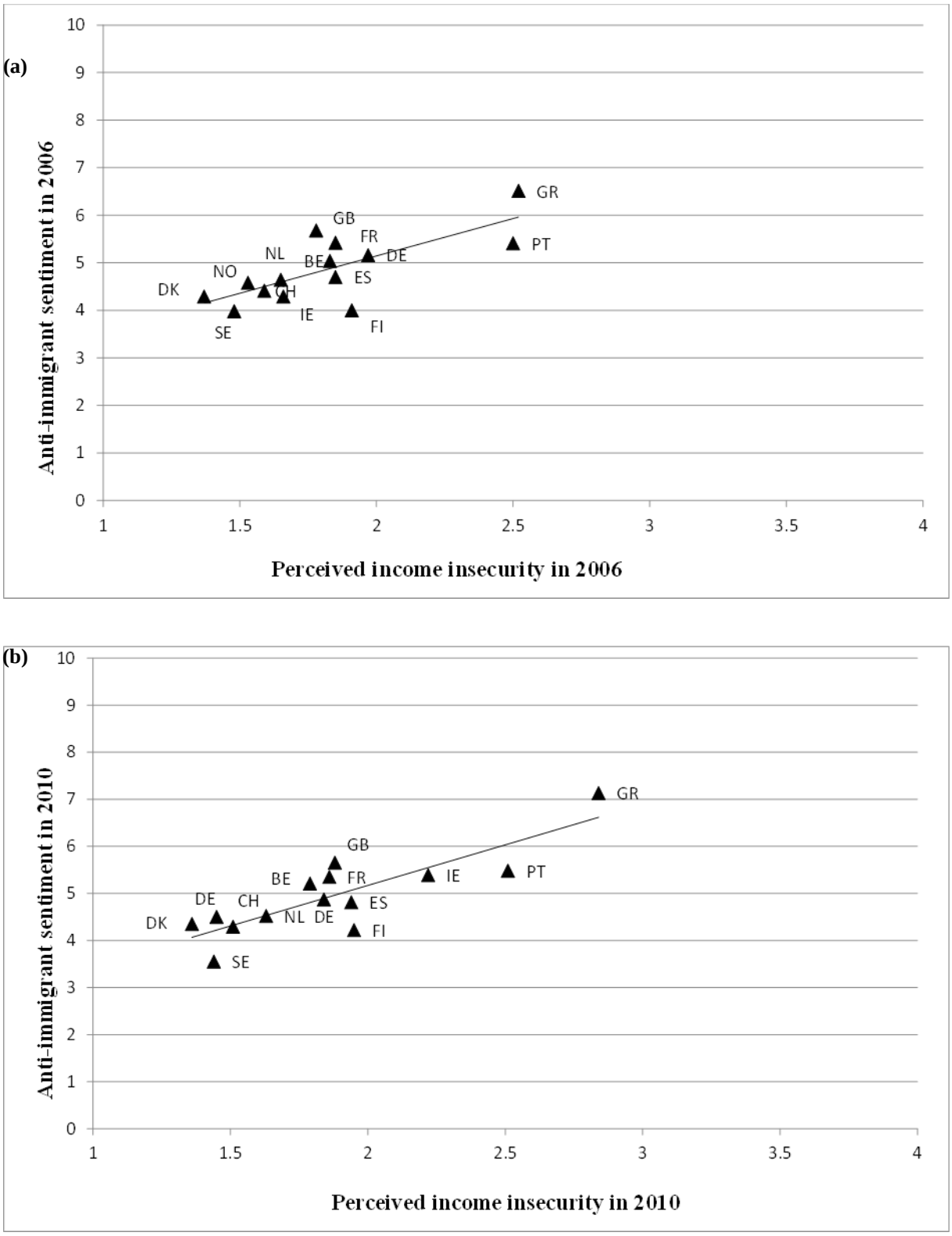
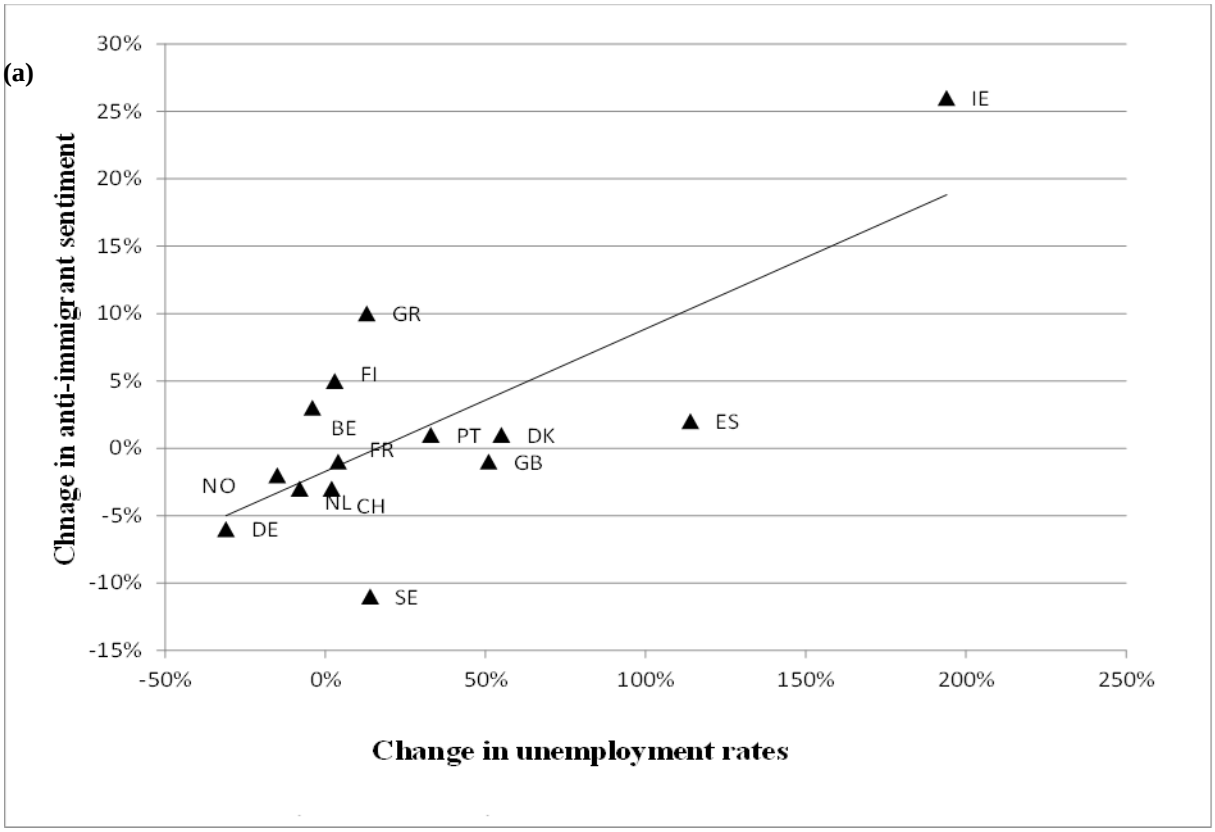


Figure 2. Associations between anti-immigrant attitudes and country mean levels of perceived income insecurity in 2006 (Figure 2a) and 2010 (Figure 2b) in 14 European countries. Note: A sensitivity analysis excluding Ireland provides similar findings.



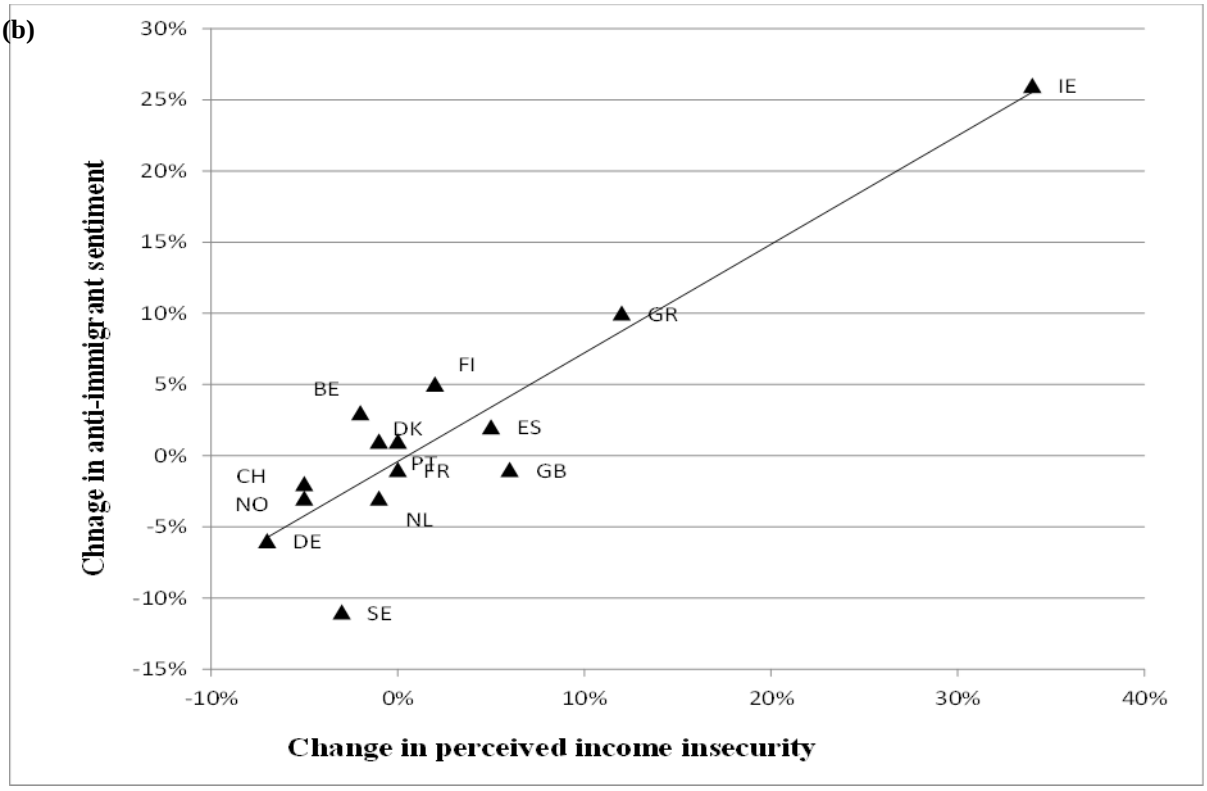


Figure 3. Associations between change in anti-immigrant sentiments, change in unemployment rates (Figure 3a), and change in perceived income insecurity (Figure 3b). Note: A sensitivity analysis excluding Ireland provides similar findings.

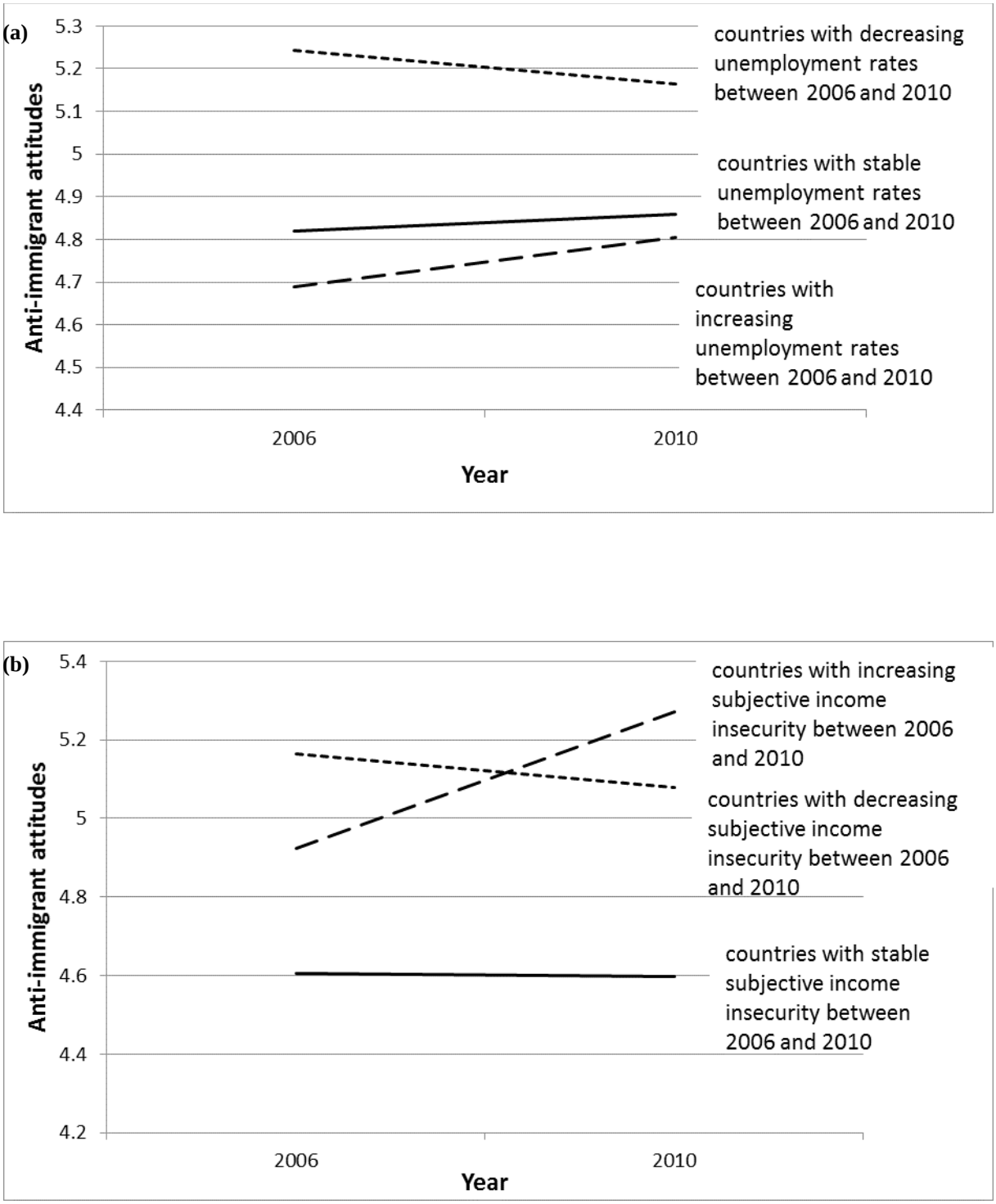


Figure 4. Change in anti-immigrants attitudes over time in three groups of countries: countries with worsening objective (a) or subjective (b) economic conditions; countries with improving objective (a) or subjective (b) economic conditions; countries with stable economic conditions.

APPENDIX A. Question wording and operationalization of variables in the analyses

Variables	**Question wording and operationalization**
Individual-level variables[1]	
Attitudes toward immigration	Summative index combining three items measuring respondents' assessment of immigrants' impact on the country: (1) "Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?" (0 = "bad for the economy" to 10 = "good for the economy", reverse coded); (2) "And, using this card, would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?" (0 = "cultural life undermined" to 10 = "cultural life enriched", reverse coded); (3) "Is [country] made a worse or a better place to live by people coming to live here from other countries?" (0 = "worse place to live" to 10 = "better place to live", reverse coded)
Age	In years
Gender	Female = 1
Type of place of residence	"Which phrase on this card best describes the area where you live?": 1 = big city or suburbs or outskirts of big city, 0 = otherwise
Education level	"What is the highest level of education you have successfully completed?": 1 = Less than lower secondary education (ISCED 0-1), 2 = Lower secondary education completed (ISCED 2), 3 = Upper secondary education completed (ISCED 3), 4 = Post-secondary non-tertiary education completed (ISCED 4), 5 = Tertiary education completed (ISCED 5-6), post coded
Religiosity	"How religious are you?" Measured on a scale: 0 = not at all religious to 10 = very religious
Political orientation	"In politics people sometimes talk of "left" and "right". Using this card, where would you place yourself on this scale, where 0 means the left and 10 means the right?" Measured on a scale: 0 = left to 10 = right
Conservation	ESS value scale (Schwartz, 2003) Summative index combining six items measuring the importance of three sub-dimensions of conservation: tradition, conformity, and security. The questions measure the similarity of a respondent to the motivations, goals, and aspirations of a described person (gender-matched), measured on a scale: 1 = very much like me to 6 = not like me at all, reverse coded: "Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer." (1) "It is important to her/him to be humble and modest. She/he tries not to draw attention to herself/himself." (2) "Tradition is important to her/him. She/he tries to follow the customs handed down by her/his religion or her/his family."

	(3) “It is important to her/him always to behave properly. She/he wants to avoid doing anything people would say is wrong.” (4) “She/he believes that people should do what they're told. She/he thinks people should follow rules at all times, even when no one is watching.” (5) “It is important to her/him to live in secure surroundings. She/he avoids anything that might endanger her/his safety.” (6) “It is important to her/him that the government ensures her/his safety against all threats. She/he wants the state to be strong so it can defend its citizens.”
Self-transcendence	Summative index combining five items measuring the importance of two sub-dimensions of self-transcendence: universalism and benevolence. The questions measure the similarity of a respondent to the motivations, goals, and aspirations of a described person (gender-matched), measured on a scale: 1 = very much like me to 6 = not like me at all, reverse coded: “Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.” (1) “It's very important to her/him to help the people around her/him. She/he wants to care for their well-being.” (2) “It is important to her/him to be loyal to her/his friends. She/he wants to devote herself/himself to people close to her/him.” (3) “She/he thinks it is important that every person in the world should be treated equally. She/he believes everyone should have equal opportunities in life.” (4) “It is important to her/him to listen to people who are different from her/him. Even when she/he disagrees with them, she/he still wants to understand them.” (5) “She/he strongly believes that people should care for nature. Looking after the environment is important to her/him.”
Unemployment	“And which of these descriptions best describes your situation (in the last seven days)?” , Unemployed, looking/not looking for a job = 1, post coded
Perceived income insecurity	“Which of the descriptions on this card comes closest to how you feel about your household's income nowadays?”: 1 = Living comfortably on present income, 2 = Coping on present income, 3 = Difficult on present income, 4 = Very difficult on present income
Time	Year in which survey was conducted: 1 = 2010, 0 = 2006
Country-level variables	
Objective economic conditions[b]	Unemployment rates (International Labor Force Survey: International Labour Organization, ILO, 2013)

	Mean of 2005 and 2006 for 2006[a] Mean of 2009 and 2010 for 2010
Subjective economic situation[b]	Mean response to the question regarding *perceived income insecurity* in each country (see individual-level variable *Perceived income insecurity*)
Share of non-EU nationals as a percentage of the total population	Source: EUROSTAT, own calculations based on information about population size and number of EU-25 nationals for 2006[a], EU-27 nationals for 2010
GDP / capita	GDP per capita based on purchasing power parity (PPP) divided by 1,000. Data are in constant 2011 international dollars. Mean of 2005 and 2006 for 2006[d] Mean of 2009 and 2010 for 2010

Note:
[1]Source: European Social Survey round 3 (2006) and round 5 (2010), Greece did not participate in 2006. Therefore, we make use of the second wave of the ESS in 2004 for this country;
Data can be downloaded from http://www.europeansocialsurvey.org/downloadwizard/. Further information on documentation and methodology is available at http://www.europeansocialsurvey.org/data/ and http://www.europeansocialsurvey.org/methodology/.
[a] 2004 for Greece: Mean of 2001 and 2007
[b] For the computation of change scores, see Footnote 3.
[c] World Bank, International Comparison Program database. Data from database: World Development Indicators, downloaded from http://databank.worldbank.org/data/reports.aspx?source=2&series=NY.GDP.PCAP.PP.KD&country=
[d]2004 for Greece: Mean of 2003 and 2004

APPENDIX B. Share of non-EU immigrants and GDP/c by country and year

	Share of non-EU immigrants		GDP/c	
	2006	**2010**	**2006**	**2010**
BE	2.7 %	3.2 %	40,314	40,538
CH	8.7 %	8.2 %	51,608	53,351
DE	6.2 %	5.6 %	38,904	40,089
DK	3.7 %	3.9 %	44,151	42,244
ES	7.2 %	7.2 %	33,731	32,999
FI	1.4 %	1.9 %	39,436	38,968
FR	3.8 %	3.9 %	36,686	36,468
GB	3.6 %	4.0 %	37,165	36,119
GR	6.7 %	7.0 %	29,903	30,288
IE	3.7 %	3.6 %	48,692	44,299
NL	2.8 %	2.6 %	43,958	45,638
NO	2.7 %	3.0 %	63,468	62,114
PT	1.8 %	3.4 %	26,584	26,798
SE	3.0 %	3.6 %	42,188	42,018
Total	4.1 %	4.4 %	41,199	40,852

APPENDIX C. Results of a multilevel analysis predicting the level of anti-immigrant attitudes in 2010 (N = 14 countries X 2 time points = 28 country/time units).

	Model 1	Model 2	Model3	Model 4
Intercept	4.804***	4.809***	4.815***	4.795***
Individual-level variables				
Age	-.001	-.001	-.001	-.001
Female	.156***	.156***	.156***	.156***
City	-.166***	-.167***	-.167***	-.167***
Education	-.292***	-.292***	-.292***	-.292***
Religiosity	-.031***	-.031***	-.031***	-.031***
Political orientation	.106***	.106***	.106***	.106***
Conservation	.509***	.509***	.509***	.509***
Self-transcendence	-.537***	-.537***	-.537***	-.537***
Unemployment	.234***	.234***	.234***	.234***
Perceived income insecurity	.304***	.303***	.303***	.303***
Country/time-level variables				
Time	.044	.083	.077	.105
Unemployment rate		-.036	-.030	-.039
Unemployment rate*time			-.007	
Mean perceived income insecurity		1.061**	1.059**	.868*
Mean perceived income insecurity*time				.299
GDP/c*1000	-.022*	-.002	-.001	-.003
Stock immigrants	.064	.060	.060	.061
Variance components				
Residual variance	3.080***	3.080***	3.080***	3.080***
Intercept variance	.277***	.209***	.209***	.207***

Note: $^{+}p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; equal weighted country*time cases n=28, n(individuals)= 45,785; Due to reasons of model identification, missing cases for variables with less than 1% missing values were deleted from the analyses; FIML estimation.

Age, education, religiosity, conservation, self-transcendence, and perceived income insecurity as well as unemployment rates, mean perceived income insecurity, GDP/pc, and stock of immigrants were grand-mean centered.

1 Previous studies suggest that the economic crisis has not necessarily resulted on average in more negative attitudes toward immigrants across European countries (Davis and Deole 2015; Hatton 2014a, 2014b; Ziller 2014). This could be attributed to the fact that in some countries attitudes became more positive and in others more negative. It should also be noted that the studies of Hatton (2014a, 2014b) included a slightly different set of countries than those in the current study. We included in our study only Western European countries.

2 We expect the individual effect of income to operate similarly at the two time points because we have no theoretical reasons to expect otherwise.

3 Greece did not participate in 2006. Therefore, we make use of the second wave of the ESS in 2004 for this country. Greece is probably one of the European countries that suffered the most during the crisis. Therefore, we believe that it is essential to include Greece in the analysis.

4 The term 'conservation' refers to social conservation of the status quo. It represents a higher-order factor in the value theory of Schwartz (1992, 1994; see also Schwartz et al. 2012) and includes the values tradition, conformity and security. The editor of IJCS noted that some readers might think this measure gauges what people would call 'conservative values'; that description seems to conform better with typical English usage. But Schwartz decided to label it differently and we use his nomenclature.

5 We calculated measures of change (i.e. unemployment rate, income insecurity, anti-immigrant sentiment) by subtracting the value in 2006 from the value in 2010 and then dividing it by the initial value in 2006. A second measure of change based on analysis of residuals leads to similar findings.

6 With only 14 cases in the analysis, statistical significance at conventional levels is not as crucial. The association is significant in 2006 but insignificant in 2010.

7 We present, in Appendix C, a multilevel analysis with 28 country*time points as macro units. As contextual variables, we introduce the unemployment rates, the aggregate levels of perceived income insecurity, and the interactions of both variables with the year 2010. Its findings point to the same direction as our OLS analyses reported below.

8 We assume the effects of all independent variables to be similar at the two times unless we introduced an interaction effect with time. As the stability or change of the effects of all other individual-level variables are beyond the scope of our study, we make use of a fixed panel regression approach. Using the general and more flexible structural equation modeling (SEM) approach would allow testing whether all effects in the model are similar or different both across time and countries. (Bollen and Brand, 2010).

9 We classified countries that experienced *increase* in unemployment as those countries where unemployment rates increased by at least 10% between 2006 and 2010 (DK, ES, GB, GR, IE, PT, SE). We classified countries that experienced *decrease* in unemployment rates as those countries where unemployment rates decreased by at least 10% between 2006 and 2010 (DE, NO). The other countries were classified as countries that did not experience any considerable change in unemployment relatively to the other countries in the study (BE, CH, FI, FR, NL). We classified countries that experienced *increase* in subjective income insecurity as those countries where the aggregated score of subjective income insecurity increased by at least 3% between 2006 and 2010 (ES, GB, GR, IE). We classified countries that experienced *decrease* in subjective economic insecurity as those countries where the aggregated score of subjective income insecurity decreased by at least 3% between 2006 and 2010 (CH, DE, NO). The other countries were classified as such which did not experience any considerable change in subjective economic conditions relative to the other countries in the study (BE, DE, FI, FR, NL, PT, SE). These cut-off points were arbitrary but robust to the selection of slightly different cut-off points.

10 Results of these additional analyses may be provided by the first author upon request.

11 Finally, we estimated a multilevel analysis on the same data in which we included, as predictors of anti-immigration attitudes, the country-level scores for unemployment rates and aggregated subjective insecurity as well as the interaction of both variables with year instead of the country group dummies. Findings reveal that the effect of aggregated subjective income insecurity was stronger after the crisis in 2010 compared to 2006. By way of contrast, the effect of unemployment rates did not increase from 2006 to 2010.

12 Country-level attitudinal change patterns over time were modest as observed also by Hatton (2014a, 2014b), but they did take place, and they did differ across countries. These change patterns may be a consequence of factors not considered in this study. For example, previous studies demonstrated that policy (Hatton, 2014a; Schlüter et al., 2013) or media (Schlüter and Davidov 2013) explain, at least in part, variation in country-level attitudes toward immigration. Future studies should explore whether *changes* in country policies toward immigration or *change* in the positivity or negativity of the media coverage about immigration had any influence on the level and change of attitudes toward immigration before and after the economic crisis over and beyond the effect of the changes in objective and subjective economic conditions.